NASA Glenn Research Center
AEROSPACE Frontiers
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Agency recognizes value of Glenn's innovativeness

Six new technologies leading to cleaner, quieter, safer, more affordable and more efficient air travel have been selected to receive NASA's Turning Goals Into Reality (TGIR) awards for innovativeness. The research on these technologies was managed at Glenn, with participation from other NASA centers, industry, and academia.

The awards, sponsored by NASA's Office of Aerospace Technology (OAT), were presented during the 2003 TGIR Conference in Williamsburg, VA. Glenn's award-winning technologies include the following:

Pioneering Technology award:
The Secure, Mobile, Wireless Network Technology Team

For the first time, seamless dissemination of data securely over a high-integrity, wireless broadband network has been achieved through the development of an advanced, miniaturized mobile router. This technology benefits ground-based transportation and military communications, as well as Internet connectivity in space. Potential applications include advanced, automated, data-intensive air traffic management concepts; increased National Air Space capacity; and reduced overall costs of air travel operations.

Mission Safety award:
Miniaturized Smart Leak Detection Sensor Team

A new hydrogen leak detection system developed to reduce the risk of explosions, improve safety, and reduce operating costs incorporates miniaturization, reliability of operation in space, and adequate sensitivity for early hazard warning. This microsystem-based hydrogen

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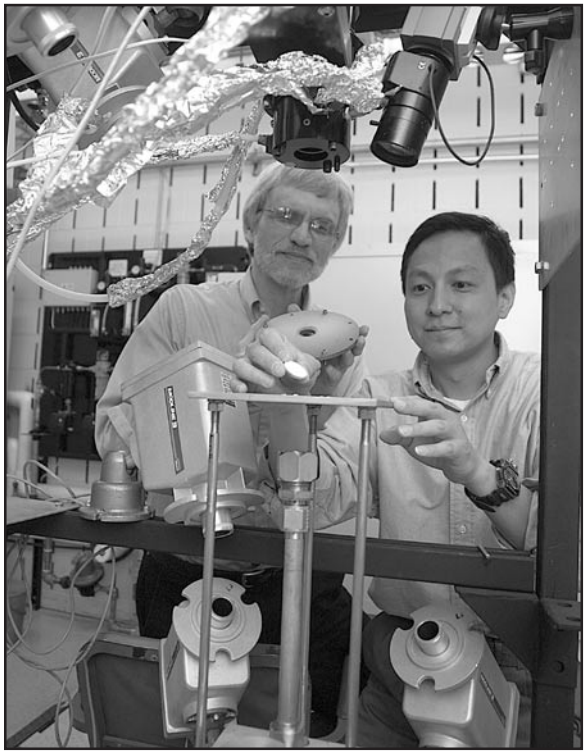

Drs. Robert Miller (5160), left, and Dongming Zhu (Army/0300) load a thermal-barrier-coated test coupon into the specimen fixture in Glenn's Cyclic Endurance Laser Test Rig Their work is part of the Turbine Airfoil Team's TGIR award-winning accomplishments in OAT's Reduce Emissions category.

Inside

F2M update: legislative victories

When the NASA Freedom To Manage (F2M) effort swung into gear 17 months ago, the F2M task force had one objective in mind: to identify and remove impediments to effective management. It did not matter whether the identified impediment required internal changes, negotiations with external agencies, or legislative amendments. F2M was willing to take it on.

One of the first major actions taken by the task force was to solicit input from across NASA on potential barriers and topics that the team should address. Several

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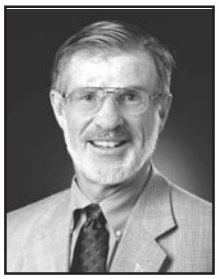
Across the Agency

Creedon retires


Dr. Creedon

Dr. Jeremiah F. Creedon, associate administrator for Aerospace Technology, has retired after 40 years with the Agency to join the faculty at Old Dominion University, Norfolk, VA. Dr. J. Victor Lebacqz, associate director for Aerospace Programs at NASA Ames, will serve as acting associate administrator until Creedon's successor is appointed.

"Jerry's retirement is a true loss of talent and continuity for NASA," said Administrator O'Keefe. "It will be daunting to find a professional of comparable expertise, insight, and passion to pursue the important aerospace technology efforts."

Under Creedon, the Office of Aerospace Technology developed innovative technology for aeronautics and space applications. He was responsible for developing new university and commercial partnerships that developed and exploited technology breakthroughs.

Prior to being named associate administrator in June 2002, Creedon was director of NASA Langley. It was there that he began his NASA career in June 1963 as a research engineer and matriculated through the ranks of management until he became center director, August 1996.

Chief of staff chosen

Administrator Sean O'Keefe appointed John Schumacher to replace Chief of Staff and White House Liaison Courtney Stadd. Stadd, who led President Bush's NASA transition team and worked with two NASA administrators in helping to cast the strategic direction of the Agency, announced plans to leave effective July 4 to pursue opportunities in the private sector.

As Chief of Staff, Schumacher will be responsible for the day-to-day operations at NASA Headquarters. He will work with Administrator O'Keefe and senior NASA staff to shape the strategic direction of the Agency, while managing and articulating various policies and programs.


Schumacher


Staad

Schumacher has served as NASA's assistant administrator for External Relations since 1995. He joined NASA in June 1989, and served as advisor to former Administrator Daniel S. Goldin until January 1991, when he became the deputy assistant administrator for External Relations.

Highlighting Staad's tenure, Administrator O'Keefe praised his dedication and loyalty to both the President and NASA. "Courtney has been a faithful public servant and a creative leader who knows how to motivate people and get things done."

Stadd is credited with aiding the Administrator's lead in implementing the President's Management Agenda and numerous important NASA initiatives, including Freedom To Manage. He leaves having worked 25 years in the private and public arenas with a primary focus on identifying aerospace and high-tech-related, market-driven opportunities.

Bridges named Langley director


General Bridges

General Roy D. Bridges, center director for NASA Kennedy in Florida, has been named center director for NASA Langley, in Hampton, VA. Bridges, a retired U.S. Air Force major general and former space shuttle pilot, will assume his new duties August 10.

Named Kennedy's center director in March 1997, Bridges was responsible for managing all of the Agency's facilities and activities related to the processing and launch of the space shuttle and expendable launch vehicles, as well as final tests, preparations, and processing of experiments and segments of the International Space Station. He also worked to develop the spaceport and range technologies to improve safety.

Deputy Center Director James W. Kennedy will assume the role of acting director until a replacement is named.

Marshall gets new center director

NASA Associate Administrator for Space Flight William F. Readdy named David A. King as the new center director for NASA Marshall in Huntsville, AL. King was appointed to succeed Arthur G. Stephenson, who stepped down after 5 years of service to become involved in promoting NASA's education efforts until his retirement in January 2004.


King


Stephenson

Prior to becoming Marshall's deputy director in November, King was director of Shuttle Processing at Kennedy, where he managed and coordinated all space shuttle processing and launch operations, overseeing the work of approximately 5400 civil service and contractor employees.

Stephenson will serve as special assistant to Dr. Adena Loston, the associate administrator for Education at NASA Headquarters, while based at the

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Kennedy engineer supports One NASA principles

This is the fourth in a series of articles that feature an employee from each NASA center who has a "One NASA" story to share.

BY JEFFREY G. STUCKEY

Well before NASA Administrator Sean O'Keefe began focusing on the One NASA concept, Cheryl Malloy, Kennedy Mission Integration manager for the Launch Services Program—formerly Expendable Launch Vehicles Program (ELV)—was actually putting those principles into practice. Malloy, a 15-year veteran with NASA, has had several first-hand experiences in working with other NASA centers on projects at Kennedy.

"I've been lucky that all of the Launch Services Program missions we work on require integration with other Centers," said Malloy.

For example, as Mission Integration manager on the Kodiak Star mission in 2001, she coordinated launch site activation, mission integration, and launch activities with the Wallops Flight Facility, the U.S Air Force, the Coast Guard, and Lockheed Martin, bringing together one Kodiak launch team to ensure a smooth mission flow and successful first launch in Alaska. The launch coordination was a prime example of NASA's Core Values and Kennedy's Guiding Principles. It emphasized the importance of building reliance and teamwork everywhere, which has been a Kennedy Guiding Principle for more than 5 years, and demonstrates One NASA.

Malloy at Kennedy Space Center.

Malloy started at Kennedy as a summer appointment in 1987 and then worked full-time in Shuttle Payloads, starting in 1990. Among the missions in Shuttle Payloads she worked on were Spacelab-Japan, Microgravity Life Sciences, and Space Life Sciences. She especially enjoyed working in Shuttle Payloads because, in addition to her electrical engineering degree, she first earned a degree in lab technology. Working on these payloads utilized both degrees and provided her the opportunity to meet and work with many scientists and experimenters inside and outside of NASA.

It was during her time in Shuttle Upgrades, from 1996 to 1998, that Malloy's work required her to become involved in projects rather than missions with other NASA centers. She transferred to ELV in 1998 and has remained there ever since. "I like the synergy that exists when you work with the NASA centers and others outside of Kennedy," said Malloy.

She so strongly believes in drawing on all resources in order to complete a project successfully that she took it one step further and participated in NASA's Industry Exchange Program. This program temporarily places personnel from commercial business into NASA, and vice versa.

Malloy recently completed her industry exchange with Science Applications International Corporation (SAIC) in Cape Canaveral while still maintaining some of her responsibilities with the Launch Services Program. Malloy said, "I wanted to benchmark their project management and compare the private sector with government."

She will be able to bring back project management practices from the private sector in the same way she shared NASA's perspectives with them. She was not surprised to find that, since SAIC is a global company, they had practices in place that were similar to One NASA.

Returning from her industry exchange to Kennedy, Malloy is working on the Marshall Space Flight Center-managed X-37 Flight Demonstration Project comprising a team including NASA's Dryden, Langley, and Ames research centers, and the Fairmont Independent Verification and Validation Facility. As the Kennedy Mission Integration manager, she and the Kennedy team will provide launch service and launch service integration. She says, "This is a perfect example of the One NASA concept—where we draw from other centers for their experience and expertise."

With any new concept there are always hurdles to overcome. Malloy says, "It's so much better to work under the 'Agency hat' than just the 'Kennedy hat.' One NASA is predominantly a culture change and it's the perfect opportunity for our leadership to set the stage for guidance and support."

Stuckey is editor of Kennedy Space Center's *Spacesport News*. ◆

NASA wins Webby

The NASA Web portal and Earth Observatory Web sites both received a Webby Award—the leading international honor for the world's best Web sites. The NASA Web portal won in the Government and Law category, and the Earth Observatory won in the Education category. In addition, both sites won the People's Voice Award in their categories. ◆

Stephenson moves to NSSTC

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National Space Science and Technology Center (NSSTC) in Huntsville. The NSSTC is a partnership between Marshall, Alabama universities, Federal agencies, and industry. NSSTC is a laboratory for cutting-edge research in selected scientific and engineering disciplines. ◆

CSU partners

C-2003-127 Photo by Marvin Smith

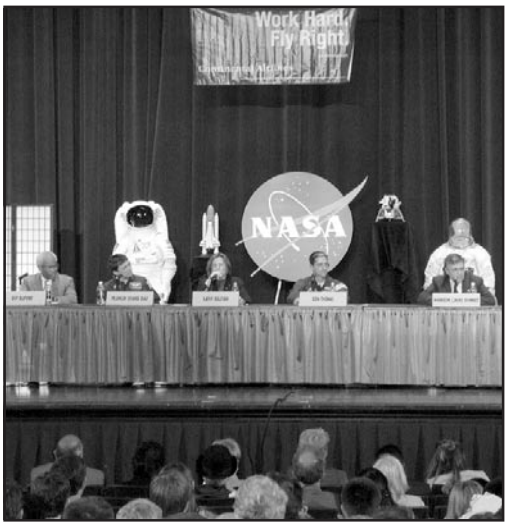
On a recent visit to Glenn, Dr. Michael Swartz, Cleveland State University president, touted the long history of collaboration the two institutions enjoy through research, and more recently, partnership in the Institute for Technological Innovation. Swartz said that he would like to investigate opportunities that will expand the partnership through student internships and co-op positions at Glenn, which are critical elements to a quality educational program. Pictured, left to right, are CSU President Swartz, Center Director Donald Campbell, and Kimberly Hill (0612).

Sacred hoop

Glenn's Office of Equal Opportunity Programs in partnership with the Cleveland area Native American Indian communities coordinated the *Sacred Hoop Journey IV: Healing the Men and Children* presentation on May 10. One of 16 Wellbriety Days sponsored by White Bison, Inc., the event stages gatherings where Native Americans share their life experiences and commit to the process of sobriety and healing from past abuses both physically and culturally. The 100-eagle-feather hoop, the centerpiece of each Wellbriety Day, carries gifts of healing, hope, unity, and the power to forgive the unforgivable. Pictured above, left to right, are Tara Weber and Don Coyhis of White Bison, Inc., with Avis Hudson (0180), Glenn's Native American Program manager and advisor to the Native American Advisory Council, and Emye Benavage (7240), who staffed Glenn's educational exhibit and participated in the festivities.

Premier science fair

Photo by Carol Galica



NASA featured prominently in this year's Intel International Science and Engineering Fair held May 11 through 17 in Cleveland. More than 35 Glenn employees served as judges and interpreters for over 1,000 of the world's top high school science and engineering students, who competed for over $3 million in scholarships, grants, prizes, and a trip to the Nobel Prize ceremonies in Sweden. Finalists of the competition were given a tour of selected Glenn facilities. An astronaut panel (pictured), Webcast and broadcasted on NASA–TV and local cable companies, united some of NASA's space pioneers, who inspired the next generation of explorers with candid insights into their life experiences. Students could also experience the thrill of exploration through hands-on activities found in Discovery Rooms hosted by Glenn's Office of Educational Programs. A virtual tour of Ohio communities using satellite imagery was featured in OhioView's Discovery Room.

Photo by Doreen Zudell

Breakfast break

Hundreds of employees started the work day off in a special way on May 15 when Smooth Jazz 107.3 The WAVE hosted a Breakfast Break at Glenn. Free Krispy Kream doughnuts and gourmet coffees from Van Roy Coffee Company highlighted the event as members of The WAVE's sales and promotional team greeted employees with a spin of the wheel for fun and prizes. Other guests, including such companies and organizations as *The Plain Dealer*, the Ohio Consumers' Counsel, RIDESHARE, and a Pink Gorilla, set up information tables and offered giveaways and prizes. Pictured, right, spinning the wheel is Tony Ventura (AKIMA/7400) with the WAVE's Melissa Foster and Bernie Kimball.

Director's Corner
With Donald Campbell

A measure of success

There are many methods to measure the relevance of our work at Glenn. One specific way we gain assurance that our efforts are on track with the technical community—in and outside of our Agency—is through awards.

This month, I would like to highlight the recent Turning Goals Into Reality (TGIR) and NorTech Innovation awards, which are featured in this issue, and other awards such as the *R&D 100* awards. Glenn garnered 6 of the Agency's 14 TGIR awards and 2 NorTech Innovation awards. As a Center, we have consistently earned a lion's share of these highly competitive awards. In fact, we lead the Agency in the total number of TGIR awards. A similar statement can be made regarding the NorTech Innovation awards. This year, Glenn was one of only two entities to receive multiple Innovation awards. Additionally, Glenn has won at least one NorTech award each year for the last 6 years. With respect to the *R&D 100* awards, Glenn leads the Agency with over 80 total awards.

We must continually strive to ensure that our efforts here at Glenn are relevant to NASA and aligned with the Agency's Vision and Mission. History has shown and current recognition through the awards cited above demonstrates that Glenn and Glenn-developed technology is relevant to the technical growth of the Agency, and ultimately critical to the economic growth of our State and our Nation.

Centennial events

On August 30 and 31 the **Cleveland National Air Show** will feature some of the world's greatest aviators. NASA Glenn will staff exhibits celebrating the Center's immense contributions to aerospace.
http://centennnial.grc.nasa.gov

From September 1 to 5 the Center will host the **16th International Symposium on Air Breathing Engines**
Cleveland The symposium will include talks by aerospace leaders, technical papers, and forums on the history and future of air-breathing propulsion.
www.conted.vt.edu/isabe

News Notes

LESA MEETING: LESA/IFPTE, Local 28, will hold its next monthly membership meeting on Wednesday, July 9, at noon in the Employee Center,

R&T REPORT: The 2002 Research & Technology (R&T) Report is now available in hard copy and online at the following URL: *http://www.grc.nasa.gov/WWW/RT/*.

CORRECTION: The Szabo award winners featured in the June *AeroSpace Frontiers* (p. 7) should have read: clockwise, starting from back to right, John Wolter, Paul Trimarchi, Bob Buehrle, and Paul Solano, with Dr. James Bridges inset.

The 2003 NASA Honor Awards Ceremony will be held on Friday, August 8, at 10:30 a.m. in the DEB Auditorium.

NASA's Deputy Administrator Frederick Gregory will be the guest speaker.

Education administrator visits Cleveland

NASA's Associate Administrator for Education Dr. Adena Williams Loston and Astronaut Leland Melvin joined hundreds of middle school students and their teachers for Physics Day held on May 21. Together they watched demonstrations connecting physics principles and amusement park rides to NASA research. Later, the guests attended the unveiling of a mural entitled *Determined Wings*, commemorating the 100th anniversary of Wilbur and Orville Wright's first flight. The mural, which depicts the history of aviation and space exploration relating to African-American history, was a community art project commissioned by Glenn and led by Jerome T. White, a local artist and teacher. White worked with 25 students recruited from Cleveland's Glenville community schools, and the Glenn-sponsored SEMAA (Science, Engineering, Mathematics, and Aerospace Academy) Program and N.A.S.A. (New Approach to Self Achievement) Project.

This 16-by 20-foot mural will be displayed on a building in Glenville.

Photo by Carol Galica

Agency applauds technologies

Continued from page 1

sensor and supporting electronics system meets Advanced Space Transportation future needs for improved leak detection capabilities.

Emissions Reduction award: Turbine Airfoil System Development Team

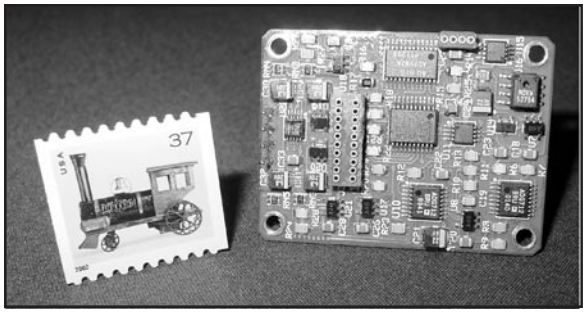
Recognized as the state of the art for turbine airfoil applications, an advanced turbine airfoil material system made up of a new blade alloy and thermal-barrier coating (TBC) has been developed. With up to an 85 ° F increase in metal temperature capability over currently used blade alloys, the alloy was selected for use in the high-pressure turbine blade of the F135 Joint Strike Fighter engine, and it can also be used in commercial applications requiring longer life and low maintenance. With the incorporation of a new TBC, the increase in blade surface temperature capability will result in higher engine efficiency and reduced CO_2 emissions.

Noise Reduction award:
Fan Noise Reduction Team

Noise reduction through fan wake management was achieved by injecting air through the blade trailing edge slots to remove or reduce nonuniformities in the fan stream, which led to reductions of more than 10 dB in the levels of fan interaction tones. Such reductions in fan noise level, when coupled with similar reductions in noise levels from the airframe and other engine components, can achieve NASA's goal of reducing aircraft system noise by a factor of 10 relative to 1997 technology.

Mobility award: SATS (Small Aircraft Transportation System) Airborne Internet Team

A new communications, navigation, and surveillance system was developed that delivers aviation information services to aircraft and ground facilities as interconnected nodes on a high-speed digital communications network (like the Internet). Included is a client server with confirmed delivery notification, a robust high-capacity aviation information system for air traffic control and safety advisories, worldwide compatibility, seamless peer-to-peer connectivity, and high bandwidth and data rates.



Leak detection systems have already been incorporated into government and commercial vehicles. The final system will be about the size of a postage stamp.

Mission Affordability award:
GRCop-84 Alloy Development Team

Use of a new alloy in combustion chamber liners will achieve an estimated 50 percent reduction in manufacturing cost, 50-percent reduction in delivery time, and additional operational cost savings through an increased number of missions. The rugged new high-temperature alloy, GRCop-84, far exceeds the capabilities of today's alloys for use in future space vehicles, meets NASA's goal of mission affordability, is twice as strong, and has 350 °F higher temperature capability over alloys used in today's combustion chambers.

For a list of team partners, view the Glenn news release at *http://www.grc.nasa.gov/WWW/PAO/html/pressrel.htm*. ◆

Student and teacher give precious gift

BY DOREEN B. ZUDELL

One of a little girl's most precious possessions is her hair. So when 5-year-old Cassie, daughter of George and Sandy Leissler, QSS/Environmental Durability Branch, donated 18 inches of hair to the Rocky River-based Wigs For Kids, it was a true act of compassion.

"I heard that some kids don't have any hair because they are sick," Cassie explained. "I was worried that the kids wouldn't grow hair fast like I do, so I gave them my hair."

Unbeknownst to Cassie, Cathy McDonnell, Cassie's preschool teacher at Glenn's onsite child development center, Lewis Little Folks, had been growing her hair (12 inches) for the very same cause.

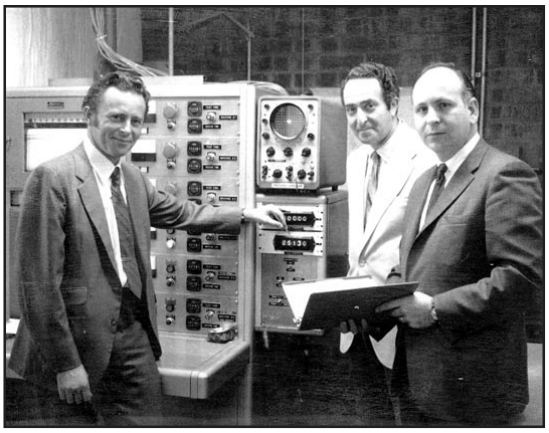
"When Cassie told me that she was cutting and donating her hair over the Easter holiday, I was so proud of her. It worked out that we both made our contributions that same weekend," McDonnell said.

Months later, student and teacher continue to take great pleasure in knowing that because of their sacrifice, children—not so different from Cassie—can gain the comfort of looking "just like every other child."

"Sometimes I think about the little girl or boy who will get my hair," Cassie said, "and it makes me smile." ◆

Cassie Leissler (left) and Cathy McDonnell in their classroom at Lewis Little Folks soon after making the hair donations.

Celebrating DN Bearing's 30th anniversary



Working together as a team under NASA sponsorship, left to right, Hans Signer (ITI), Eric Bamberger (GE) and Erwin Zaretsky (NASA) designed and operated the first successful 3 million DN bearings on June 29, 1973.

June 29, 2003, marked the 30th anniversary of a new era in bearing technology that began in a Glenn test rig. On that date in 1973, a test rig was activated with two specially designed angular-contact ball bearings set to simulate the operation of the main shaft of an advanced turbine aircraft engine with the speed set at $3x10^6$ DN. A technological breakthrough was achieved 2500 test hours later—the longest lived, high-speed bearings had survived, issuing in the era of the ultra-high-speed, rolling-element bearing.

Up until then, working knowledge on bearing technology was limited to $2x10^6$ DN. The pioneering research and the development of enabling lubricant and material technology for the $3x10^6$ DN bearing was initiated in 1959 at NASA Lewis (Glenn) by Erwin Zaretsky, now chief engineer in the Structures and Acoustics Division, in collaboration with industry partners Hans Signer, Industrial Tectonics, Inc., Rancho Dominguez, CA, and Eric Bamberger, General Electric Co., Evansdale, OH.

"We ran a total of 30 specially designed and manufactured 120-mm-bore angular-contact ball bearings at 25,000 rpm (120mm X 25000 rpm = $3x10^6$ DN) for an accumulated total of 74,800 test hours," Zaretsky recalled.

Using a high-speed pulley-belt arrangement as a drive, Signer and Zaretsky designed the test rig. They also designed the $3x10^6$ DN bearing using a high-speed-bearing dynamics computer code developed by Tedric Harris, SKF Industries, King of Prussia, PA, for NASA. This code was the first of its type that incorporated both thermal and elastohydrodynamic analysis. Bamberger was responsible for the lubricant and materials used in the bearing. The bearings were manufactured from a single heat of VIM–VAR AISI M–50 steel, using a double-vacuum process for the first time for this purpose. A concept that the researchers names "Bearing Thermal Management" employed both under-ring lubrication and outer-ring cooling. This enabled bearing operating temperatures to increase 50 °F to 425 °F from the then state-of-the-art bearing temperature of 375 °F.

At $3 x10^6$ DN the bearing life was over 23 times that achievable for state-of-the-art single-vacuum-melted (VAR) AISI M–50 steel bearings. As a result of this technological innovation, Zaretsky, Singer, and Bamberger received an *Industrial Research Magazine* IR 100 Award in 1975, now known as the *R&D 100*. In the 3 decades that have passed, this technology has been incorporated into the specifications, design, and manufacture of all aircraft engine bearings. ◆

NASA's legislative victories

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suggestions submitted required legislative change. Consequently, the F2M team helped introduce legislative proposals into the FY03 process that resulted in five legislative amendments that resolved several F2M impediments.

Some of the provisions under these amendments center on such areas as employment flexibility, which now enable Centers to maximize their ability to hire the best candidates, as well as remove certain restrictions that limit voluntary separation incentives. Another provision eliminates certain limitations on appropriations for travel amounts. For a summary of the F2M legislative actions, visit *http://wwwinternal.grc.nasa.gov/WWW/0170/f2m/*.

"These provisions are far reaching," said Glenn's F2M Point-of-Contact Olga Gonzalez-Sanabria, director of the Systems Management Office. "We're proud that F2M is making a difference. More proposals will be introduced in the FY04 and FY05 process."

In an F2M update session in May, Gonzalez-Sanabria provided an overview of the program, touching on such topics as scope of the issues, points of contact, and status of overall suggestions.

"With nearly 1000 suggestions to date, much progress was made quickly to address these concerns," she explained. "In February, however, the F2M task force effort was put on hold to address the Space Shuttle *Columbia* investigation. Work resumed in May, as the task force focuses on re-evaluating the closure process and developing metrics."

Gonzalez-Sanabria noted several user-friendly enhancements that are being developed for the F2M Web site, *http://f2m.nasa.gov*. The site serves as the primary feedback mechanism for providing status and results to employees who have submitted suggestions. ◆

Glenn's people, technology recognized locally

FEB awards

Five Glenn employees were among area Federal workers honored at the Cleveland Federal Executive Board (FEB) 17th annual Wings of Excellence program held June 17. The award recognizes civil servants who by their outstanding performance on the job and/or exceptional service in the community are a credit to their coworkers in the Federal service and an inspiration to others.

Dr. George Baaklini, Structures and Acoustics Division, was recognized for his technical accomplishments and dedication to community outreach in the Cleveland area. As technical group leader in the Life Prediction Branch, he helped formulate and deliver state-of-the-art technology in nondestructive evaluation science and structural life prediction. Baaklini has made significant advancements in digital radiography, microcomputed tomography, and engine health monitoring. Similarly, Baaklini's outreach has merited an award for mentoring onsite staff, summer faculty, and students, as well as Cleveland State University's (CSU) 2001 George B. Davis alumnus award for dedication to the growth and advancement of students at CSU, where he currently serves as adjunct professor.

Bernice Beznoska, Project Development Branch, was recognized for her support and dedication as a member of the Space Communications Office, and for her outreach as Glenn's Loaned Executive for the 2002 Combined Federal Campaign (CFC). Beznoska supports many programs in the Computer Security Administration Branch, computer hardware and software procurements, and project outreach. She has also committed the time, skills, and creativity necessary to develop new campaign strategies, as well as for training, motivating, and guiding Agency chairpersons and key workers to achieve the CFC contribution goals.

Dr. Baaklini

Beznoska

Blaze

Melcher

Sepesi

Casey Blaze, Manufacturing and Engineering Development Division, was recognized for his role in forming strategic partnerships with industry, academia, nonprofit consortiums, as well as with a former astronaut in revolutionary manufacturing technology areas, particularly state-of-the-art laser-engineered net shaping and bio-fabrication. His vision, dedication, strong interpersonal skills, and technical expertise have enabled Glenn to establish unique, cutting-edge manufacturing capabilities and to transfer key technologies across Northern Ohio.

Kevin Melcher, Controls and Dynamics Technology Branch, was recognized for his contributions to NASA programs and the aerospace industry through his work in dynamic simulation, testing, and control of inlets for advanced aerospace propulsion systems. His expertise in developing dynamic simulation models of complex inlets is widely known and sought after across the Agency and by industry. Melcher was also noted for his leadership and responsibilities in his church community and as a member of Glenn's Prayer Group.

Ronald Sepesi, Procurement Division, was recognized for his leadership and innovative processes in contracting with small, minority, women-owned, and historically underutilized business (HUB) zone firms. Sepesi provided leadership in NASA's first Award Term and first HUB Zone set-aside contracts. He also led Glenn's first small disadvantaged business reservation under U.S. General Services Administration schedules and first contract with a tribally-owned firm. His innovations have served as a model across the Agency. ◆

Best new products in Northeast Ohio

Two diverse Glenn-developed technologies—one that demonstrates Internet connectivity between moving vehicles and the other a high-temperature thermal-barrier seal—were recently awarded a 2003 NorTech Innovation award.

Mobile Internet Protocol router technology was developed in partnership with Cisco Systems and Western Datacom. The new technology possesses the ability to communicate through an encrypted, mobile network, allowing instantaneous and continuous Internet connectivity. The mobile networking technology will make space communications in low-Earth-orbiting research vehicles as easy as Internet access here on Earth. In addition to NASA's use for space communications and orbiting spacecraft, the technology could also be used by the military for keeping troops in the field

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Glenn receives two NorTech 2003 awards

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informed, or for emergency management services, railroad and shipping systems, the automotive industry, and travelers.

Glenn employees Will Ivancic, Satellite Networks and Architectures Branch, and Phil Paulsen, Project Management Branch of the Space Communications Office, worked with a team of engineers from five other companies in the development of the mobile networking technology.

Testing of thermal barrier in a full-scale static solid rocket motor test performed by Thiokol.

A high-temperature thermal-barrier seal was developed to prevent hot gases from reaching temperature-sensitive nozzle O-rings in solid rocket motors for heavy-lift space launch vehicles, including the space shuttle. The new braided carbon-fiber thermal barrier is capable of reducing the temperature of the 5500 ° F rocket combustion gas to permit only relatively cool (<200 ° F) gas to reach the O-rings. This new technology also enables the solid-rocket-motor nozzle joints to be assembled in one-sixth of the time of previous approaches. In addition to playing an important role in the Nation's space program, potential industrial applications for the new thermal-barrier seal include sealing furnace doors to prevent escape of super-heated gases and sealing processing equipment in the chemical industry.

Dr. Bruce Steinetz and Pat Dunlap, both in the Mechanical Components Branch, developed the new high-temperature thermal-barrier seal.

NorTech Innovation awards, formerly known as the EDI Innovation awards, are named for the Northeast Ohio Technology Coalition (NorTech), the technology affiliate of Cleveland Tomorrow. The awards honor innovators and companies for creating some of the best new products in Northeast Ohio.

The awards program is sponsored by Key Bank; Ernst & Young; Squire, Sanders & Dempsey LLP; the Ohio Department of Development; Case Western Reserve University's Weatherhead School of Management; and its subsidiary Enterprise Development, Inc. ◆

Hippensteeles bid farewell

BY DOREEN B. ZUDELL

Forty years ago when Sandy (Ritter) and Steve Hippensteele came to the Center within a month of each other, little did they know that NASA would become such an integral part of their lives. In June, Sandy retired with 30 years of service from the Office of the Director, just behind Steve, who left the Turbomachinery and Propulsion Systems Division with 40 years in May.

Sandy and Steve Hippensteele

Sandy, a local Clevelander, and Steve, a native of Ft. Wayne, IN, began their long association with NASA in the fall of 1963. Both joined the Agena Project Office—Sandy as a branch secretary and Steve as an engineer. A coworker soon introduced the young people and they married in 1967.

Through hard work, dedication, and a belief that they were making important contributions to the Nation, the Hippensteeles both excelled in their careers at the Center. Sandy and Steve spent a large portion of their time in the Launch Vehicle Office, working with topnotch professionals such as Larry Ross and Andy Stofan, who both would go on to become center director at the Laboratory.

Over their combined 70 years of service, many friendships were formed and kept. Steve's coworkers in the Turbine Branch—*Turbine Coolies*—still meet for lunch twice a year since the 1960s. Sandy also meets regularly with a small group of secretaries who share a long history at the Center.

"This Center was our career, not just a stepping stone," the Hippensteeles said. "We love this place and the people because they have been such a large part of our lives. We could never imagine working anywhere else."

Although retirement seems like moving away from family, the Hippensteeles look forward to the next stage of their lives, confident that the quality people they have come to know and mentor will continue the good work. ◆

People

Honors

Dr. Christos Chamis, 5000, senior aerospace scientist, has been elected Fellow in the Society of American Engineers. He is recognized for his pioneering contributions to the field of science and engineering in 3–D inelastic analysis, probalistic structural analysis, structural tailoring, and high-temperature composite mechanics in which he developed computational methods and computer codes.

Glenn's Chief Scientist **Dr. Marvin Goldstein**, 0100, has received the 2003 Fluids Engineering award from the American Society of Mechanical Engineers. Goldstein is recognized for his theoretic contributions to the field of aeroacoustics, particularly ground-breaking work in boundary-layer receptivity, and the development of the nonlinear integral differential equations for amplitude and phase evolution of interacting waves.

The Glenn Business and Professional Women's (BPW) organization has awarded two $400 scholarships to Center employees for use in the pursuit of higher education. The recipients include the following:

Emily Groh (ANLX) serves as a technical writer and project coordinator in the Electron Device Technology Branch. She is working toward a bachelor of arts degree in English at Baldwin Wallace College.

Kimala Walker (AKAC) is an engineering technician IV in the Sensors and Electronics Technology Branch. She is enrolled at Cleveland State University to earn a degree in electrical engineering.

In addition to the recent scholarship announcements, BPW has named new officers for the 2003 to 2004 year: president, **Barbara Kakiris** (IDI/2100); first vice president/programs, **Anita Alexander** (7105); second vice president/membership, **Julie Barker** (IDI/7501); secretary, **Mary Reveley** (2400); and treasurer, **Donna Miller** (7220). Glenn's BPW celebrates its 35th anniversary on Lab this year. The organization currently has 22 members, with three charter members: **June Bahan-Szucs**, **Malvina Hay**, and **Annie Easley**.

Dr. Chamis

Dr. Goldstein

Groh

Walker

In Memory

Frank Friswold, 91, who began his career as an electronics engineer in the Aircraft Engine Laboratory, recently died. He was one of the programmers for the first computer at Glenn, and helped create instrumentation for the first satellite in space and the lunar landing module in 1969.

William Green, 85, who retired from Glenn in 1972, recently died. He retired with 28 years of service as a welder in the Fabrication Shop.

Albert Lukas, 87, who retired from Glenn with 27 years of service, recently died. He retired in 1974 as a supervisory photographer.

Booker Payne, 89, who retired with 28 years of service, recently died. He retired in 1971 as a building maintenance mechanic.

Exchange Corner

- The Exchange Store Second Annual Sidewalk Sale will be held on Wednesday and Thursday, July 16 and 17, 11 a.m. to 2 p.m. Get great buys on closeout items. A hot dog and Pepsi lunch special will be served on the patio both days.

- The Discovery Toys Sale is set for Wednesday and Thursday, July 23 and 24. Discovery Toys Consultant Angie Lowe will demonstrate and sell a wide variety of healthy growth and development toys for children of all ages. The sale will take place from 10 a.m. to 2 p.m.

- Cedar Point and Six Flags amusement park tickets for the 2003 season are available at the Exchange Store. Discount movie tickets for Cinemark, Regal Cinema, and AMC theaters are also available.

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DEADLINES: News items and brief announcements for publication in the August issue must be received by noon, July 11. The deadline for the September issue is noon, August 15. Submit contributions to the editor via e-mail, doreen.zudell@grc.nasa.gov, fax 216–433–8143, phone 216–433–5317 or 216–433–2888, or MS 3–11. Ideas for news stories are welcome but will be published as space allows. View us online at http://AeroSpaceFrontiers.grc.nasa.gov.

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In Appreciation

My family and I would like to thank all who offered their expressions of sympathy, prayers, cards, flowers, donations, and friendship to us during my wife's battle with cancer and at the time of her death. **—John Gyekenyesi and family**

I would like to thank all my coworkers and friends for their loyal support, kindness, and sympathy during the last 7 months of my sister's illness, followed by her untimely death at the age of 32. It has been a very difficult time for me, but your love and support has been a great comfort. Thank you. **—Kathy Giordano**

I wish to thank my NASA colleagues who expressed sympathy at the passing of my mother, Anastasia. Your support has meant a lot to me. **—Christos Chamis**

On behalf of the Kress family, I would like to thank everybody at NASA Glenn for your incredible support during our time of need. The calls, e-mails, letters, mass cards, charitable donations, notes, prayers, visits, meals, expression of sympathy and love really touched our family. Our daughter Nora's death left a huge hole in our family—she was our source of energy, life, humor, and passion. However, thanks to you, we have been better able to deal with this terrible situation. We cannot thank you enough. We will always be grateful and you will always be a very special part of our family. God bless each and every one of you.
—Marty Kress and family

Glenn's Shoe Fund, a 34-year tradition that helps make the school year brighter and warmer for needy children, will hold its annual fundraiser drive July 7 through July 11. Donations will go to Shoes and Clothes for Kids, a local charity that provides hundreds of pairs of shoes and clothing items to children in the Cleveland area. Watch for flyers and envelopes on donating.

Behind the Badge

a closer look at our colleagues

Geraldine "Gerri" Davis

Job assignment: I provide administrative and clerical support to the Icing Branch in the Turbomachinery and Propulsion Systems Division.
Time at NASA: I've been here since November 1991.
Hometown/current residence:
Describe your family: and I have a beautiful 20-year-old daughter, who helps keep us young. We also have five budgie parakeets, and a 3-year-old golden-capped conure, named Sunni.
Career alternative: If I could change today, I would get a degree in medical records technology.
Favorite food: Chocolate
Favorite music: Classical and Jazz
Favorite Web site: Dr. Koop.com
Favorite book or magazine: *BirdTalk*
Favorite movie or play: *Turner and Hootch*
Person you most admire: Author Danielle Steele
Activities when away from NASA: When I have free time I like to quilt. Working in the garden can be fun, too. I also like to spend time with my pets.
What do you see as an area of expertise to be proud of at NASA? Being able to see the big picture, and anticipating what will be needed in the future.

Retirements

James Braatz retired from the Test Installations Division on April 3, 2003, with 37 years of NASA service.

Kenneth DeLaat retired from the Procurement Division on April 19, 2003, with 23 1/2 years of NASA service.

Michael Johnston retired from the Test Installations Division on April 3, 2003, with 33 years of NASA service.

Bonita Kaltenstein retired from the Logistics and Technical Information Division on April 30, 2003, with 30 years of NASA service.

Ronald Molosky retired from the Central Process System Branch on May 3, 2003, with 36 1/2 years of NASA service.

Vincent Rawlin retired from the Power and Onboard Propulsion Branch on April 1, 2003, with 40 1/2 years of NASA service.


DeLaat


Johnston


Kaltenstein


Rawlin

Centennial of Flight

Come one, come all to Inventing Flight's NASA Day

BY DOREEN B. ZUDELL

Hundreds of NASA employees, retirees, and their families will gather on July 17 and 18 for "NASA Day" with special guest Senator John Glenn during the Inventing Flight celebration, July 3 through 20, in Dayton, OH.

The event kicks off on the evening of July 17

The park commemorates the region's rich history through 23 buildings and structures, artifacts, programs, and events.

"A parade will take guests on a journey back in time to the days of aviation's founding fathers, the Wright Brothers," said Susan Hennie, Glenn's Centennial of Flight project manager. "During the parade we hope that some of NASA's senior managers will play the roles of some of the most influential and fascinating aviation supporters of the early 1900s."

The park will also be the backdrop for a special One NASA Family Barbeque. During this time, civil servants and support service contractors from across NASA centers can celebrate the Agency's rich history of flight and share a delicious barbeque of ribs, chicken, and all the fixings with Agency officials.

"Agency managers want to thank NASA employees for their dedication and hard work," Hennie explained. "What a fitting way to celebrate, as we thank the Wrights for beginning this wonderful aviation history."

On July 18, NASA employees are invited to assemble at Celebration Central in downtown Dayton. A variety of activities awaits them, including Educator Astronaut Events featuring Associate Administrator for Education Dr. Adena Williams Loston, reflections by NASA officials from the six enterprises, and tours of expansive exhibits that highlight the Nation's 100th anniversary of powered flight.

Senator John Glenn serves as Inventing Flight's Secretary General.

NASA employees can also meet astronauts and live the excitement of aviation at the Dayton Air Show,

For further information on NASA Day or ticket information for the barbeque, visit the Centennial of Flight Web site at *http://centennial.grc.nasa.gov* or Inventing Flight's Web site at *http://inventingflight.gov*. ◆

National Aeronautics and
Space Administration

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